

### **REMARKS**

In the Office Action mailed on December 31, 2007, the Examiner objected to the drawing because the legend in figure 2 was in German and because it was designated as "Diagramm 1." The specification was objected to for containing the term "Diagramm 1 shows." Claims 1-9 were rejected under 35 U.S.C. § 103(a) over US 6,739,383 ("Marchionni") in view of either US 2002/0036073 ("Takeuchi") or US 7,156,152 ("Hohenbichler").

By means of the present Amendment, changes to the specification, and drawings have been introduced. Specifically replacement drawings in accordance with 37 C.F.R. 1.121(d) is enclosed for the Examiner's consideration together with corresponding amendments to pages 7 and 9 of the specification.

Support for these amendments can be found in the English language translation of the originally-filed application, such as, for example, on page 8, paragraph 1, lines 1-3, and page 9, last paragraph. No new matter has been introduced.

In view of the amendments to the drawings and specification, together with the following remarks, Applicants respectfully request reconsideration and withdrawal of all grounds of rejection and objection.

#### **Objection to the drawing**

The Examiner objected to the drawing because the legend in figure 2 was in German and because it was designated as "Diagramm 1." Applicants enclose herewith replacement drawings in accordance with 37 C.F.R. 1.121(d) with corrections. As a result, Applicants request reconsideration and withdrawal of the objection to the drawings.

#### **Objection to the Specification**

The Specification was objected to for containing the term "Diagramm 1 shows." Applicants have amended the Specification to replace the term with "Figure 2 shows."

Additionally, "BRIEF DESCRIPTION OF THE FIGURE" has been replaced by "BRIEF DESCRIPTION OF THE DRAWINGS" to include figures 1 and 2. Support for these amendments can be found in the English translation of the originally-filed application, such as,

for example, on page 8, paragraph 1, lines 1-3, and page 9, last paragraph. No new matter has been introduced.

In view of the amendments to the Specification, Applicants respectfully request reconsideration and withdrawal of the objection.

**Rejection of Claims 1-9 Under 35 U.S.C. § 103(a)**

Claims 1-9 were rejected under 35 U.S.C. § 103(a) over Marchionni in view of either Takeuchi or Hohenbichler. The Examiner asserts that Marchionni discloses the invention as claimed except for an inert atmosphere containing nitrogen and hydrogen above the molten metal pool. The Examiner alleges that both Takeuchi and Hohenbichler disclose an inert atmosphere containing nitrogen and hydrogen above the molten metal pool and it would have been obvious to a person of ordinary skill in the art to combine the teachings of Marchionni with either Takeuchi or Hohenbichler. Applicants respectfully traverse.

Superiority of a property shared with the prior art is evidence of nonobviousness. See MPEP 716.02(a). See also *In re Chupp*, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987). Applicant's claimed method prevents surface crack formation.

Marchionni discloses a method for continuously casting steel strips using "twin role casting." See abstract and column 1, lines 7-13. Marchionni identifies the high risk of microcracks appearing on the strips as a main problem during the manufacture. See column 1, lines 34-40. Specifically, Marchionni discloses that when the  $Cr_{eq}/Ni_{eq}$  ratio is greater than 1.70, it is not always possible to avoid the presence of microcracks. See column 2, lines 54-57. Although Marchionni mentions using an inert gases as such nitrogen, hydrogen, ammonia or CO<sub>2</sub>, Marchionni fails to provide any specific mixtures of gases or their relative amounts.

Takeuchi discloses using a mixture of nitrogen and 2% - 10% hydrogen in the casting chamber. See Takeuchi page 4, paragraph [0059]. Hohenbichler discloses using an inert gas containing up to 7% hydrogen. See Hohenbichler column 3, lines 15-23. However, neither Takeuchi or Hohenbichler teach or suggest a process of casting steel containing a  $Cr_{eq}/Ni_{eq}$  ratio greater than 1.70.

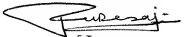
Additionally, Marchionni, Takeuchi or Hohenbichler, either alone or in combination fail to teach or suggest the unexpected results obtained during casting steel with a  $Cr_{eq}/Ni_{eq}$  ratio

greater than or equal to 1.70 under a specific atmosphere of nitrogen and 0 – 10 mol% hydrogen. The specific content of hydrogen breaks down nitrogen into its atomic components. See page 5 of the English language translation of the originally-filed application. The absorption and diffusion of atomic nitrogen into the steel ensures homogeneous solidification, good imprinting characteristics, prevention of surface cracks, minimal entrapment of oxides in the surface of the strip, minimal risk of reoxidation of the casting melt, optimal surface appearance, minimal heterogeneous shine, uniform and consistent surface shine of finished strip, and a significant rise in casting capacity irrespective of sulfur content of the processed melt. See pages 5-7 of the English language translation of the originally-filed application. Thus, as a result of providing a steel melt with a  $Cr_{eq}/Ni_{eq}$  ratio greater than or equal to 1.70 in combination with an atmosphere of nitrogen and 0 – 10 mol% hydrogen, Applicants are able to obtain a homogeneous solidification and are able to prevent surface cracks in their finished strip.

### CONCLUSION

In view of the foregoing, Applicants respectfully reconsideration and withdrawal of all grounds of rejection and objection. The Examiner is welcome to contact Applicants' agent at the number below with any questions.

Respectfully submitted,



Date: June 30, 2008  
PTO Reg. L0312

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